

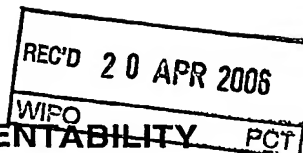
## PATENT COOPERATION TREATY



## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference P199	<b>FOR FURTHER ACTION</b>		See Form PCT/PEA416
International application No. PCT/GB2005/000563	International filing date (day/month/year) 16.02.2005	Priority date (day/month/year) 16.02.2004	
International Patent Classification (IPC) or national classification and IPC INV. F17C13/00 F17C3/08			
Applicant ABERDEEN UNIVERSITY et al.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 1 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input checked="" type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand  16.12.2005		Date of completion of this report  18.04.2006	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tlx 523656 eprmu d Fax: +49 89 2399 - 4465		Authorized officer  Nicol, B  Telephone No. +49 89 2399-8188 	

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**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2005/000563

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**Box No. I Basis of the report**

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1. With regard to the language, this report is based on
- ☒ the international application in the language in which it was filed
  - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
    - ☐ international search (under Rules 12.3(a) and 23.1(b))
    - ☐ publication of the international application (under Rule 12.4(a))
    - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))
2. With regard to the elements\* of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

1-9 as originally filed

**Claims, Numbers**

1-8, 9(part) as originally filed

9(part), 10-14 received on 16.12.2005 with letter of 16.12.2005

**Drawings, Sheets**

1/2, 2/2 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2005/000563

**Box No. II Priority**

1. ☒ This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:  
☒ copy of the earlier application whose priority has been claimed (Rule 66.7(a)).  
☐ translation of the earlier application whose priority has been claimed (Rule 66.7(b)).
2. ☐ This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-14
	No: Claims	
Inventive step (IS)	Yes: Claims	1-14
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-14
	No: Claims	

2. Citations and explanations (Rule 70.7):  
see separate sheet

**Re Item V**

**1. The subject-matter of claim 1 meets the requirements of Article 33(1) PCT.**

Document D1 (GB2351549) discloses in accordance with claim 1 (see fig. 2) a liquefied gas cryostat which comprises inner (3) and outer (2) walls defining an evacuated housing, a multilayer insulation (5) positioned between the inner and outer walls, and at least one radiation shield (6) circumscribing the inner wall between the inner and outer walls so as to extend over an area of the inner wall which is contacted and cooled by liquefied gas in the cryostat when in use.

Document D1, which is considered to represent the most relevant state of the art, discloses thus a cryostat from which the subject-matter of claim 1 differs in that the radiation shield comprises a plurality of rods which are thermally conducting and electrically insulating when the cryostat contains liquefied gas.

The subject-matter of claim 1 is thus new.

The problem to be solved may be regarded as to provide a radiation shield which is easy to fabricate and which reduce eddy currents.

The differing features are not disclosed in the prior art and there is no incentive given in the prior art to modify the system of D1 in order to solve the problem posed and to get this of claim 1.

The subject-matter of claim 1 involves thus an inventive step.

**2. The subject-matter of dependent claims 2-14 concern further embodiments of the invention according to claim 1. Thus, these claims also meet the requirements of Article 33(1) PCT.**

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contact with a venting tube of the cryostat through which gas is vented, as liquified gas boils off, via a heat exchanger, for transferring heat from the radiation shield to the tube.

- 5 [0041] 10. A cryostat according to claim 9 wherein the heat exchanger is fabricated from metal or a ceramic material.
- [0042] 11. A cryostat according to claim 9 or 10 wherein the heat exchanger is in the form of strips or rods or material.
- [0043] 12. A cryostat according to claim 10 or 11 wherein
- 10 the heat exchanger comprises rods of aluminium.
- [0044] 13. A cryostat according to any preceding claim which contains liquid helium.
- [0045] 14. A cryostat according to any preceding claim which houses a Superconducting Quantum Interference Device for MRI
- 15 or NMR scanning.

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